

**CLAIMS:**

1. A pump for generating fluid flow in an elastic tubular conduit having a lumen, comprising:
  - (a) four electrically operated valves, each valve being positionable adjacent to the conduit, each valve having a valve head, the valve head configured to alternate from a first position in which the lumen of the conduit adjacent to the valve head is unobstructed and a second position in which the lumen of the conduit adjacent to the valve head is obstructed; and
  - (b) a driver, comprising at least one electromagnet, configured to control the positions of the valve heads, so as to execute the temporo-spatial array of valve head positions of Fig. 4.
2. The pump according to Claim 1, wherein the valve heads have a first dimension positionable perpendicular to the axis of the conduit and a second dimension positionable parallel to the axis of the conduit, the second dimension of all of the valve heads being equal.
3. The pump according to Claim 1, wherein the valve heads have a first dimension perpendicular to the axis of the conduit and a second dimension parallel to the axis of the conduit, and wherein the second dimensions are not all equal or the shape of the valve heads are not all the same.
4. The pump according to any one of the previous claims having a base configured to maintain a segment of the conduit in a straight line or in an S shape.
5. The pump according to any one of the previous claims wherein the tubular conduit is held in a sleeve.
6. The pump according to any one of the previous claims wherein the tubular conduit is preloaded.
7. The pump according to any one of the previous claims wherein one or more valve heads is oblique to the conduit.

8. The pump according to any one of the previous claims further comprising a communications device for transmitting information to a remote receiver.

9. A pumping system comprising two or more pumps according to any one of the previous claims.

5 10. The pumping system according to Claim 9 comprising two or more pumps in which at least two pumps are arranged in series.

11. The pumping system according to Claim 9 comprising two or more pumps in which at least two pumps are arranged in parallel.

12. A driving mechanism for use in a pump according to any one of the 10 previous claims comprising:

- (a) an X shaped metal lever pivotable around an axis;
- (b) A first auxiliary lever pivotable about the axis;
- (c) A second auxiliary lever pivotable about the axis;
- (d) An intermittently activatable electromagnet generating, when

15 activated, a magnetic field between a first metal core arm and a second metal core arm;

wherein the magnetic field causes rotation of an auxiliary lever about the axis when extremities of the lever arm are not between the first and second core arms so as to bring the extremities between the first and second core arms.

20 13. A pump according to any one of claims 1 to 8 comprising the mechanism of Claim 12.

14. A pump according to any one of claims 1 to 8, comprising:

(a) a lever bar pivotable around an axle, having a first end and a second end;

25 (b) a first valve head attached to the first end of the lever bar;

(c) a second valve head attached to the second end of the lever bar; and

(d) an electromagnet rotating the lever arm between a first configuration in which the first valve head is in an up position and the second valve head is in a down position, and a second configuration in which the first 30 valve head is in a down position and the second valve head is in an up position.

15. A pump according to any one of claims 1 to 8, 13 and 14 operated by batteries.
16. A pump according to any one of claims 1 to 8, and 13 to 15 comprising a control panel that is detachable from the rest of the pump.
- 5 17. The pump according to Claim 16 wherein communication between the control panel and the rest of the pump is via an electric cable.
18. The pump according to Claim 16 wherein communication between the control panel and the rest of the pump is via a wireless connection.
- 10 19. The pump according to any one of claims 1 to 8, 13 to 18 further comprising a transceiver communicating with a remote station.
20. The pump according to any one of claims 1 to 18 and 13 to 19 further comprising an anti-free flow device.